In response to the Office Action dated July 27, 2009, Applicant requests consideration of the following remarks. No claims are amended. Claims 1-5 and 6-12 were previously cancelled. Claims 13-15 are currently pending in the application. No new matter has been added by virtue of the amendments.

I.   Double Patenting Rejection

Claim 13 (inadvertently indicated as claim 1, in the Office Action) is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 13 of copending Application No. 10/613,825 in view of Wang (US 2002/0094017) (herein "Wang").

In response, a terminal disclaimer is filed herewith disclaiming any patent term extending beyond that of any patent that may issue from Application No. 10/613,825. Consequently, it is believed that this rejection has been overcome.

II.   Claim Rejections - 35 U.S.C. § 103
Claim 13:

Claim 13 is rejected under 35 U.S.C. 103(a), as being unpatentable over Wang in view of Endo et al. (US 5,461,630). Applicant respectfully traverses the rejection.

Wang discloses a multipath signal searcher in a RAKE receiver of a CDMA wireless communication system (para. [0017]). The RAKE receiver 119 includes an antenna 120, front end processing block 200, multipath searcher block 204, and a finger demodulator/combiner block 206 (FIG. 4, para. [0023]). The multipath searcher block 204 searches for signals at various time offsets, and creates or updates a list of those time offsets which have a search metric above a threshold (para. [0024]). Within the multipath searcher block 204, each of multiple search paths 214 is associated with a particular time offset and searches an incoming signal 202 at the specified time offset for the search metric (para. [0025]). The search paths 214 search even time offsets within a search window during a first integration period, and the search paths 214 search odd time offsets within the search window during a second integration period (para. [0028] through [0030]). A candidate selector block

212 determines which search metrics have signals above a threshold, and fingers within the finger demodulator/combiner block 206 are controlled to demodulate the best set of time offsets (para. [0026]).

Endo discloses a magnetic recorder/reproducer, which converts two-channel analog signals into digital signals (Abstract). Digitized audio data to be recorded on a magnetic tape is stored in a memory circuit 4 (FIG. 5, col. 5, lines 25-40). The stored data and error correction codes are modulated by a modulation circuit 7, amplified by a recording amplifier 8, and supplied by a selection switch 9 to either a first rotary head 10 or a second rotary head 11, which record the data on a magnetic tape (FIG. 5, col. 5, lines 2-7 and 41-50). To reproduce the data, reproduced digital signals read from the two rotary heads 10, 11 are supplied through selection switches 9, 12, amplified by reproducing amplifier 13, and supplied to a demodulation circuit 14 (FIG. 5, col. 5, lines 55-63). The demodulation circuit 14 demodulates the reproduced digital samples to produce digital audio signals, which are stored in a second memory circuit 15 (FIG. 5, col. 5, lines 63-65),

Applicant's claim 13 includes at least the following features, which distinguish claim 13 from that which is disclosed in Wang, Endo or their combination:

". . . storing even phase samples of the digital chip samples in a first buffer of a plurality of buffers of the digital communication system;

storing odd phase samples of the digital chip samples in a second buffer of the plurality of buffers;

providing the even phase digital samples or the odd phase digital samples to a demodulator, wherein the demodulator is adapted to produce a symbol estimate based on the even phase digital samples or the odd phase digital samples; and

providing other ones of the even phase digital samples or the odd phase digital samples, whichever are not used by the demodulator, to a searcher, wherein the searcher is adapted to determine multi-path components in the digital communication signals."

Neither Wang, Endo nor their combination disclose each and every feature of claim 13. First, neither Wang, Endo nor their combination disclose storing even and odd samples

in separate buffers and providing only one of the even or odd samples to the demodulator. The Office Action states that Wang does not disclose "storing even and odd samples in separate buffers and providing only one of the [even] or odd samples to the demodulator", and goes further to state that Endo discloses "providing the even phase digital samples or the odd phase to a demodulator, wherein the demodulator is adapted to produce a symbol estimate based on the even phase digital samples or the odd phase digital samples" (Office Action, page 4).

Applicant agrees that Wang does not disclose "storing even and odd samples in separate buffers". However, Applicant respectfully disagrees that Endo discloses "providing the even phase digital samples or the odd phase to a demodulator." In Endo, modulated and amplified digital signals are supplied to either of two rotary heads 10 or 11 through a selection switch 9, for storage on a magnetic tape (FIG. 5, col. 5, lines 2-7). Reproduced digital signals (from the magnetic tape) are then read from the rotary heads 10 and 11, amplified, and provided to a demodulation circuit 14. The demodulation circuit 14 demodulates all of the reproduced digital signals and stores the resulting digital audio signals in a memory circuit 15 (FIG. 5, col. 5, lines 55-65). Because Endo discloses demodulating all of the reproduced digital signals, Endo cannot disclose "providing the even phase digital samples or the odd phase to a demodulator". Further, the demodulator of Endo produces digital audio signals, and Endo does not disclose the demodulator "producing a symbol estimate."

In addition, neither Wang, Endo nor their combination disclose providing other ones of the even phase digital samples or the odd phase digital samples, whichever are not used by the demodulator, to a searcher. Wang discloses a searcher first searching even time offsets within a search window (during a first integration period), and subsequently searching odd time offsets within the search window (during a second integration period) (para. [0028] through [0030]). The "even time offsets" and the "odd time offsets" are not analogous to "even phase signals" and "odd phase signals". In addition, samples associated with a particular time offset would include a set of consecutive (in time) samples, and not "even phase" or "odd phase" samples. Finally, because the searcher searches both the even time offsets and the odd time offsets, the searcher of Wang searches all of the samples, and not either even phase or odd phase samples.

For at least the above-given reasons, it is apparent that neither Wang, Endo nor their combination disclose each and every feature of claim 13. Based on the above remarks, Applicant believes that the rejection of claim 13 under 35 U.S.C. §103(a) has been overcome. Accordingly, Applicant respectfully requests that the Examiner reconsider the rejection in light of the amendments and remarks, and withdraw the rejection.

Claims 14 and 15:

Claims 14 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wang and Endo, and further in view of Easton et al. (US 6,985,516) (herein "Easton"). Applicant respectfully traverses the rejection.

The Wang and Endo references were previously discussed. Easton discloses a receiver unit 200 (FIG. 2) that includes a buffer 224, a data processor 230, and a controller 240 (FIG. 2; and col. 6, lines 21-43). Complex, digital baseband samples are stored in the buffer 224. Data processor 230 retrieves the samples from the buffer 224, processes the retrieved samples, and provides processed symbols to a buffer/de-interleaver 234 (col. 6, lines 52-55). Data processor 230 can be operated with a clock signal that may be asynchronous to, and faster than, the sample rate of the samples stored in buffer 224 (col. 8, lines 25-28). Data processor 230 can be used to instantiate and support multiple fingers of a rake receiver (col. 8, lines 34-37). Data processor 230 may include a correlator 522, a symbol demodulator and combiner 524, and an accumulator 526 (FIG. 5). The correlator 522 despreads the I and Q samples with a complex PN dispreading sequence to provide despread samples (col. 12, lines 21-28). Symbol demodulator and combiner 524 performs demodulation and combining of demodulated symbols corresponding to various signal instances to generate recovered symbols that are stored to buffer/deinterleaver 234 (col. 12, lines 37-55). For signaling data processing, correlator 522 may provide the despread samples to accumulator 526, which accumulates the despread samples over a particular time period, and provides the recovered (e.g., pilot or power control) data to controller 240 (col. 13, lines 4-15).

As discussed above in conjunction with the response to the rejection of claim 13, neither Wang, Endo nor their combination disclose each and every feature of claim 13. Accordingly, neither Wang, Endo nor their combination disclose each and every feature of

claims 14 or 15. Further, Easton does not make up for the deficiencies in Wang and Endo. Accordingly, neither Wang, Endo, Easton nor their combination disclose each and every feature of claims 14 and 15.

Based on the above remarks, Applicant believes that the rejection of claims 14 and 15 under 35 U.S.C. §103(a) has been overcome. Accordingly, Applicant respectfully requests that the Examiner reconsider the rejection in light of the amendments and remarks, and withdraw the rejection.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (480) 385-5060. If necessary, the Commissioner is hereby authorized to charge payment or credit any overpayment to Deposit Account No. 50-2091 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

/SHERRY W. SCHUMM/
Date July 29, 2009   Sherry W. Schumm
                                      Reg. No. 39, 422

                                      (480)385-5060